BUILDING PERFORMANCE

CONSULTATION DOCUMENT

Lead and corrosion resistance in copper alloy plumbing products

Proposed transition period end date extension

April 2024

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Te Kāwanatanga o Aotearoa
New Zealand Government

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Ministry of Business, Innovation and Employment (MBIE) Hīkina Whakatutuki – Lifting to make successful

MBIE develops and delivers policy, services, advice and regulation to support economic growth and the prosperity and wellbeing of New Zealanders.

MORE INFORMATION

Information, examples and answers to your questions about the topics covered here can be found on our website: **www.mbie.govt.nz**.

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Preface

The Building Code forms a key part of our building regulatory system in New Zealand. It sets the minimum performance for building work and new buildings. The Ministry of Business, Innovation and Employment (MBIE) is responsible for updating the Building Code and its documents so we can keep pace with innovation, current construction methods and the needs of contemporary New Zealand.

A high-performing system is critical to ensure people are safe and healthy, and living in durable homes and buildings. At MBIE, we aim for a balance between setting minimum performance requirements where necessary and encouraging higher standards of performance where this will impact positively on outcomes for the country.

This consultation document seeks your feedback on a proposed extension to the transition period end date for the G12/AS1 provisions for lead in plumbing products and dezincification resistant copper alloys.

Please take the time to let us know your thoughts. MBIE will carefully consider and weigh all submissions before making any decisions. You can provide feedback by following the instructions on MBIE's Have Your Say webpage.

Final decisions on the changes will be made and communicated later this year.

How to provide feedback

We invite you to submit feedback on this proposed update to the Building Code transition period by 5:00pm on Tuesday, 23 April 2024.

› You can provide your feedback by downloading a submission form at MBIE's Have Your Say webpage and send it to us by email or post.

- Email to: buildingfeedback@mbie.govt.nz, with subject line **'Building Code transition period extension consultation 2024'**
- Post to:
  Building Code transition period extension consultation 2024
  Building System Performance
  Ministry of Business, Innovation and Employment
  PO Box 1473
  Wellington 6140

Your feedback will contribute to further development of the Building Code.

Release of information

MBIE may publish copies or excerpts of submission to MBIE's website at www.mbie.govt.nz. MBIE will consider you to have consented to publishing by making a submission, unless you clearly specify otherwise in your submission.

If your submission contains any information that is confidential or you otherwise wish us not to publish it, please:

- indicate this at the start of your submission, with any confidential information clearly marked within the text
- provide a separate version excluding the relevant information for publication on our website.

Submissions will also become official information, which means it may be requested under the Official Information Act 1982 (OIA). The OIA specifies that information is to be made available upon request unless there are sufficient grounds for withholding it. If we receive a request, we cannot guarantee that feedback you provide us will not be made public. Any decision to withhold information requested under the OIA is reviewable by the Ombudsman. If you have any objection to the release of any information in the submission, and in particular, which parts you consider should be withheld, please set this out in your submission together with the reasons for withholding the information. MBIE will take such objections into account and will consult with submitters when responding to requests under the Official Information Act 1982.

Private information

The Privacy Act 2020 establishes certain principles with respect to the collection, use and disclosure of information about individuals by various agencies, including MBIE. Any personal information you supply to MBIE in the course of making a submission will only be used for the purpose of assisting in the development of advice in relation to this consultation or for contacting you about your submission. We may also use personal information you supply in the course of making a submission for other reasons permitted under the Privacy Act 2020 (e.g. with your consent, for a directly related purpose, or where the law permits or requires it). Please clearly indicate in your submission if you do not wish your name, or any other personal information, to be included in any summary of submissions that MBIE may publish.

We will only retain personal information as long as it is required for the purposes for which the information may lawfully be used. Where any information provided (which may include personal information) constitutes public records, it will be retained to the extent required by the Public Records Act 2005. We may also be required to disclose information under the Official Information Act 1982, to a Parliamentary Select Committee or Parliament in response to a Parliamentary Question. You have rights of access to and correction of your personal information which can be found on the MBIE website at www.mbie.govt.nz.

1. Lead and corrosion resistance in copper alloy plumbing products

On 2 November 2023, MBIE introduced a new limit to the maximum allowable content of lead permitted in copper alloy plumbing products used for drinking water supplies, and a new requirement for copper alloy water supply system components to be dezincification resistant.

A transition period is currently in place, with the change in allowable lead content set to come into force on 1 September 2025, and the change regarding dezincification resistance on 1 November 2024.

When these changes were consulted on and announced in 2022, the lead in plumbing products transition period end date of 1 September 2025 was in alignment with the introduction of equivalent plumbing product changes in Australia. However, Australia has since extended their transition period end date by eight months, to 1 May 2026.

We are now proposing to extend the transition period end date for the new lead in plumbing product provision in New Zealand, to 1 May 2026. This is an extension of eight months and aligns with the transition period end date in Australia.

We are also proposing to define the term *lead free* to improve clarity for the identification of products that meet the requirements of the new lead in plumbing product provision, and make editorial changes.

Additionally, we are proposing to extend the transition period end date for the new dezincification resistant copper alloy provision to 1 May 2026. This will align with the transition period end date for the lead in plumbing product provision. This proposed change will provide clear, consistent and aligned timeframes for those that need to adapt the types of copper alloys used to manufacture plumbing products.

Aligning the lead in plumbing product transition period end date in New Zealand with that in Australia will provide plumbing product manufacturers and suppliers additional time to make the necessary changes.

1.1. Reasons for the change

Background

The use of lead in the manufacture of plumbing products has been common practice for many centuries. Lead is commonly used in copper alloys, such as brass and bronze, where a small amount of lead is added to provide malleability. These alloys are frequently used as components of plumbing products, including those in contact with drinking water. In New Zealand, small amounts of lead are currently allowed in the raw materials used to manufacture some plumbing products, provided it does not contaminate the water. Products that contaminate drinking water do not comply with the Building Code.

Lead has long been recognised as a cumulative toxin and people can be exposed to lead from ingestion of water, airborne dust, food, and soil. While existing products that comply with the Building Code are safe, health officials recommend that, where possible, exposure to lead should be reduced. The World Health Organisation (WHO) recommends all practical measures to reduce exposure to lead should be implemented, including the use of low lead alloy fittings in new plumbing installations or repairs.

Dezincification can occur when copper alloys containing more than 15 per cent zinc come into contact with natural or treated waters. Dezincification is a corrosion process where a copper alloy undergoes selective leaching of the zinc into the water supply, leaving only a porous copper residue. Particular types of copper alloy can be used for manufacturing plumbing products which give resistance to dezincification corrosion.

New lead content and corrosion resistance in copper alloy plumbing product provisions announced in 2022

In November 2021, Australia announced a new limit for the allowable level of lead in plumbing products used for drinking water.

In May and June of 2022, MBIE consulted on proposed changes to improve the safety and reliability of new plumbing systems.[1] This consultation included a proposal to limit the maximum allowable content of lead permitted in certain copper alloy plumbing products. This proposed change aligned with the lead in plumbing product changes being made in Australia, and with existing lead free plumbing product requirements in North America. The 2022 consultation proposal included clarifying that certain copper alloy plumbing products must be dezincification resistant to reduce the risk of corrosion. At that time, the proposed transition period for the lead limit in copper alloy plumbing products aligned with the date when equivalent requirements would come into effect in Australia. The transition period for the dezincification resistant copper alloy provision, however, became aligned with the date when the other November 2023 acceptable solution amendments would come into effect in New Zealand.

The consultation submissions we received informed the decision to proceed with the lead content and corrosion resistance in copper alloy plumbing product changes.[2]

On 15 November 2022, MBIE announced that a new limit for lead content in copper alloy drinking water supply products would be introduced in New Zealand and would come into effect on 1 September 2025.

Lead free transition period extended by eight months in Australia

On 24 April 2023, the Australian Building Codes Board announced the date for all relevant products to meet the new lead requirements in Australia would be extended by eight months, to 1 May 2026.[3]

This extension meant that the transition period end date in New Zealand no longer aligned with the date that equivalent provisions would come into effect in Australia. Following the announcement in Australia, MBIE received feedback from stakeholders in the plumbing product supply chain that they are facing challenges to meet the current transition period end dates.

We are seeking further feedback from the sector on a proposed extension of the transition period end dates.

1 www.mbie.govt.nz/dmsdocument/20115-consultation-document-building-code-update-2022-plumbing-and-drainage
2 https://www.building.govt.nz/assets/Uploads/building-code-compliance/building-code-updates/lead-in-plumbing-products-outcome-of-consultation-building-code-update-2022.pdf
3 www.abcb.gov.au/news/2023/update-advice-new-lead-requirements

1.2. Proposed changes

The proposed changes include:

- extending the transition period end date to 1 May 2026 for the new limit for lead content in copper alloy drinking water supply products in G12/AS1 to come into effect
- extending the transition period end date to 1 May 2026 for the new dezincification resistant copper alloy provision in G12/AS1 to align with the proposed extended transition period end date for the limit for lead content in copper alloy drinking water supply products
- providing a definition for *lead free* within G12/AS1, which supports the new lead in plumbing product provision and aligns with equivalent definitions used in Australia and the United States of America
- editorial changes within G12/AS1 and G12/AS3.

Please refer to Appendix A for the proposed wording in Acceptable Solutions G12/AS1 and G12/AS3.

1.3. Options considered

For this proposal, MBIE has considered the following two options:

Option 1. Retain the current transition period end date (status quo)

This option considered retaining the current transition period end date of 1 September 2025 for the new lead in plumbing product provision, and 1 November 2024 for the new dezincification resistant copper alloy provision within Acceptable Solution G12/AS1.

Option 2. Extend the current transition period end date to 1 May 2026 (proposed)

This option considered extending the transition period end date for the new lead in plumbing product and dezincification resistant copper alloy provisions to 1 May 2026 within Acceptable Solution G12/AS1. It also considered defining the term *lead free* to improve clarity, and making editorial corrections. This option would align the transition periods under the Building Code with lead free plumbing product changes introduced in Australia.

1.4. Analysis of the proposed changes

1.4.1. Objectives of the proposal

The objective of this proposal is to support the successful implementation of changes to further reduce the potential for exposure to lead and improve the corrosion resistance of copper alloy plumbing products that are in contact with drinking water.

1.4.2. Impacts of the proposed changes

There are a number of product categories impacted by this proposal, and these categories include subsets of many product types ranging in size and value.

MBIE has heard from some manufacturers and suppliers that the current transition period may not provide sufficient time to make the necessary changes to support the availability of some products. This issue has been compounded for plumbing products supplied in both Australia and New Zealand by the eight month extension of the transition period in Australia. This could lead to further supply chain constraints and cost increases, similar to those which have been heightened in the past few years due to the Covid-19 pandemic. This could also lead to substantial amounts of currently compliant products being discarded if stock is not sold and installed prior to the transition period end date.

The costs and benefits of extending the transition period end date were assessed qualitatively. MBIE expects the following from this change:

- Improved availability of compliant products during the eight month period prior to the Australian transition end date.
- Smaller cost increases for plumbing product suppliers in New Zealand, as most of the affected products are also supplied into the Australian market.
- Improved competitive pricing for New Zealand during the upcoming eight month period of misalignment, when products able to be sold in Australia would no longer comply in New Zealand.
- Reduced risk that substantial amounts of impacted products would need to be discarded if currently compliant stock is not sold and installed prior to the transition period end date.
- Reduced impacts to the trade in plumbing products to and from Australia, which in turn supports the principles of the Trans-Tasman Mutual Recognition Arrangement (TTMRA).
- Clear, consistent and aligned timeframes for manufacturers adapting copper alloy plumbing products.
- Potential for competitive disadvantages for manufacturers and suppliers of some product categories which are able to adapt more rapidly.
- Potential for misunderstandings due to additional changes.

Extending the New Zealand transition end date to align with the same date in Australia of 1 May 2026 provides a balance of these factors.

1.5. Questions for the consultation

1. Do you support amending Acceptable Solution G12/AS1 to re-align the transition period end date for the new **lead in plumbing product provision** to come into effect in New Zealand with the date when equivalent requirements will come into effect in Australia?

   This would extend the transition period for the new lead in plumbing product provision by eight months, to 1 May 2026.

2. Do you support amending Acceptable Solution G12/AS1 to align the transition period end date for the new **dezincification resistant copper alloy provision** with the transition period end date for the lead in plumbing product provision?

   This would extend the transition period for the new dezincification resistant copper alloy provision to 1 May 2026.

3. Do you support amending Acceptable Solution G12/AS1 to provide a **definition for *lead free*** similar to equivalent definitions used in Australia and the USA?
4. Do you support amending Acceptable Solutions G12/AS1 and G12/AS3 to address the editorial changes as proposed?
5. What impacts would you expect for your business from the proposed changes? These impacts may be economic/financial, environmental, health and wellbeing-related, or other areas.

Appendix A: Proposed changes to the acceptable solutions for clause G12 Water Supplies

We are proposing changes to the acceptable solutions for clause G12 Water Supplies. The table below identifies the portions of the documents that we are proposing to amend. The proposed changes are presented as the new or amended text shown in blue with existing text, that is proposed to be deleted, shown in orange.

Should you require any clarification please contact buildingfeedback@mbie.govt.nz.

Proposed transition period end date extensions and *lead free* definition

G12/AS1 Water supplies, 3rd Edition, Amendment 13		
Current text (orange text to be removed)	**Proposed text (blue text to be added)**	**Explanation and justification**
2.1.3 Lead in plumbing products From 1 September 2025, any product that contains copper alloy and is intended for use in contact with *potable water* for human consumption shall have a weighted average lead content of no more than 0.25% verified in the form of a test report provided by a test facility with IANZ or equivalent accreditation in accordance with NSF/ANSI/CAN 372.	**2.1.3 Lead in plumbing products** From 1 May 2026, any product that contains copper alloy and is intended for use in contact with potable water for human consumption shall be *lead free*, with verification available in the form of a test report provided by a test facility with IANZ or equivalent accreditation in accordance with NSF/ANSI/CAN 372.	The transition period for the new G12/AS1 lead in plumbing product provision is proposed to be extended by eight-months. An eight-month extension would: › Align the transition period end date for New Zealand with Australia. › Improve availability of compliant products. › Support healthy competition and Trans-Tasman trade. › Ease ongoing supply chain constraints. › Reduce barriers for lower-volume product turnover and risk of product dumping. › Provide additional time for product compliance verification and WaterMark product certifications. A definition for the term *lead free* is also proposed to be introduced into G12/AS1. This proposed definition is similar to equivalent definitions used in Australia and the USA and will help to provide clarity regarding the identification of products that meet the requirements of the new lead in plumbing product provision.
2.2.3 All copper alloy *water supply system* components in contact with water and subject to hydrostatic pressure shall be dezincification resistant (DR) and shall comply with AS 2345.	**2.2.3 Dezincification resistance** From 1 May 2026, all copper alloy *water supply system* components in contact with water and subject to hydrostatic pressure shall be dezincification resistant (DR) and shall comply with AS 2345.	The transition period for the new dezincification resistant copper alloy provision is proposed to be extended to align with the proposed transition period end date for the lead in plumbing product provision. Aligning the transition period for the new dezincification resistant provision with the new lead in plumbing product provision would reduce barriers for manufacturers that need to adapt the types of copper alloys used in the manufacture of plumbing products. A sub-heading also proposed to be added to clarify the purpose of this paragraph.
Definitions No current definition	**Definitions** **Lead free** Where a plumbing product or material in contact with *potable water* has a weighted average lead content of no more than 0.25%.	A definition for the term *lead free* is proposed to be introduced into G12/AS1. This proposed definition is similar to equivalent definitions used in Australia and the USA and will help to provide clarity regarding the identification of products that meet the requirements of the new lead in plumbing product provision.

Proposed editorial corrections

We are proposing editorial changes to clarify the existing requirements and resolve existing conflicts in the acceptable solutions used to comply with Building Code clause G12 Water supplies.

These editorial changes may include obvious errors in the text, typos, spelling mistakes, incorrect cross-references, changes in the formatting, minor clarifications of text with minor to no impact, or other items related to current document drafting practices.

G12/AS1 Water supplies, 3rd Edition, Amendment 13		
Current text (orange text to be removed)	**Proposed text (blue text to be added)**	**Explanation and justification for change**
2.1.3 Lead in plumbing products ... **COMMENT:** 1. Some examples of products subject to Paragraph 2.1.3 include: a. Copper alloy fittings b. Stainless-steel braided hoses c. Valves (such as valves for isolation, backflow prevention, alteration of pressure and temperature) d. Taps and mixers e. Water meters f. Pumps (for use with cold and hot *water supply systems*) g. Water heaters h. Residential water filtration equipment i. Water dispensers (such as boiling and cooling units, drinking fountains and bottle fillers) j. Fire sprinkler systems connected to the cold water service that are not isolated from fixtures and fittings intended to supply water for human consumption 2. Some examples of products excluded by Paragraph 2.1.3 include: a. Showers and baths for bathing, including shower and bath mixers b. Emergency showers, eye wash and/or face wash equipment c. Pumps used for irrigation, fire-fighting or other non-*potable water* purposes d. Fire-fighting water services and equipment e. Appliances, including washing machines and dishwashers f. Commercial boilers associated with heating, ventilation and air-conditioning systems g. *Sanitary fixtures* (such as toilets, cistern inlet valves, bidets, urinals) h. Non-*potable water* systems (such as recycled water systems) i. Products used exclusively for non-*potable* uses such as manufacturing, industrial processing, irrigation or any other uses where the water is not anticipated to be used for human consumption 3. Paragraph 2.1.3 does not prevent use of products certified in accordance with 2.1.3 prior to 1 September 2025. 4. Guidance on the identification of products that comply with Paragraph 2.1.3 is available from www.building.govt.nz	**2.1.3 Lead in plumbing products** ... **COMMENT:** 1. Some examples of products subject to Paragraph 2.1.3 include: a. Copper alloy fittings b. Stainless-steel braided hoses c. Valves (such as valves for isolation, backflow prevention, alteration of pressure and temperature) d. Taps and mixers e. Water meters f. Pumps (for use with cold and hot *water supply systems*) g. Water heaters h. Residential water filtration equipment i. Water dispensers (such as boiling and cooling units, drinking fountains and bottle fillers) j. Fire sprinkler systems connected to the cold *water supply system* that are not isolated from fixtures and fittings intended to supply water for human consumption 2. Some examples of products excluded by Paragraph 2.1.3 include: a. Showers and baths for bathing, including shower and bath mixers b. Emergency showers, eye wash and/or face wash equipment c. Pumps used for irrigation, fire-fighting or other non-*potable water* purposes d. Fire-fighting water services and equipment e. Appliances, including clothes washing machines and dishwashers f. Commercial boilers associated with heating, ventilation and air-conditioning systems g. *Sanitary fixtures* (such as toilets, cistern inlet valves, bidets, urinals) h. Non-*potable water* systems (such as recycled water systems) i. Products used exclusively for non-*potable* uses such as manufacturing, industrial processing, irrigation or any other uses where the water is not anticipated to be used for human consumption 3. Paragraph 2.1.3 does not prevent use of products certified in accordance with 2.1.3 prior to 1 September 2025. 4. Guidance on the identification of *lead free* products that comply with Paragraph 2.1.3 is available from www.building.govt.nz	Editorial terminology clarifications within G12/AS1 2.1.3 Comment which contains lead in plumbing product provision examples.
Figure 1: Air Gap Separation Paragraph 3.5.1	**Figure 1: Air Gap Separation** Paragraph 3.6.1	Editorial correction to G12/AS1 Figure 1 paragraph reference.

G12/AS3 Water supplies, 3rd Edition, Amendment 13		
Current text (orange text to be removed)	**Proposed text (blue text to be added)**	**Explanation and justification for change**
G12/AS3 Header WATER SUPPLIES	G12/AS3 Header COLD AND HEATED WATER SUPPLY SYSTEMS	Editorial change within the page header to update the title of G12/AS3. This change will help differentiate G12/AS3 from G12/AS1.
G12/AS3 Title **Acceptable Solution G12/AS3**	G12/AS3 Title **Acceptable Solution G12/AS3** Cold and heated water supply systems (Included in Amendment 13)	Editorial change to include the title of G12/AS3 and when this Acceptable Solution was included in this document. This change will help differentiate G12/AS3 from G12/AS1 and provide clarity around when this Acceptable Solution was published.
1.0.2 Buildings having the classification of Community Care (e.g. hospitals, old people's homes, prisons) to which this Acceptable Solution is applied shall be provided with cold water storage of no less than 50 litres per person in accordance with the requirements of Acceptable Solution G12/AS1 Paragraph 5.1.1 Water storage.	**1.0.2** Water storage Buildings having the classification of Community Care (e.g. hospitals, old people's homes, prisons) to which this Acceptable Solution is applied shall be provided with cold water storage of no less than 50 litres per person in accordance with the requirements of Acceptable Solution G12/AS1 Paragraph 5.1.1 Water storage.	Editorial change to include a sub-heading for G12/AS3 paragraph 1.0.2. This change will help to clarify the purpose of this paragraph.

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